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Post—**Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society**

Andre Lemos

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What is This?

Post–Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking About Territory, Place, and Mobility in Contemporary Society

Andre Lemos[1]

Abstract

The basic underlying idea of this article can be put as follows: informational mobile technologies have enabled new means of communication and sociability based on what I call "post-mass media functions" and "informational territories." What is at stake here is to question some visions about the relationship between informational and network technologies and place, territory, community, and mobility. I'll argue here that new mobile technologies, under the label of "locative media," are creating new "territorialization" (control, surveillance, tracking), convergences between physical and informational mobilities, new meanings of space, place, and location, and against the idea of anomie and isolation, new forms of sociability. To elucidate this hypothesis I will briefly examine social and communication practices with "locative media" projects in for main areas: "electronic urban annotations," "mapping and geo-localization," "location-based mobile games," and "flash and smart mobs." These projects put in evidence new understanding of territory, place, temporality, maps, mobility, and community.

Keywords

communication, place, locative, territory, space

Post–Mass Media Function

By mass media function, I mean a centralized flow of information with an editorial control by big companies in the process of competition funded by advertising. These companies put all the efforts on the production of "hits," the mass success. The role of mass media (TV, radio, newspapers, magazines) is focusing, in most cases, on a national or local territory. The mass media have an important social and political role in the formation of public and public opinion in

[1]Universidade Federal da Bahia, Salvador, Bahia, Brazil

Corresponding Author:
Andre Lemos, Universidade Federal da Bahia, Rua Augusto Viana s/n, Palácio da Reitoria,
Salvador 40110-060, Bahia, Brazil
Email: alemos@ufba.br

modernity (de Tarde, 2005). These functions are primarily addressed here. We can define mass as an amount of unknown people that are not spatially together and that have little opportunity to interact. Mass media functions are also state concessions.

The post–mass media functions[1] operate from technologies and networks where anyone can produce information, "releasing" the editorial center. The production of information is not necessarily commercial and does not necessarily have economic conglomerates behind. The post–mass media function does not compete for massive funding in advertising and is not focused on a specific geographic territory. The post–mass media functions are not state concessions and allow information customization, publication and dissemination worldwide, with multimedia capabilities. The product is customizable and the communication is biased by conversation: communication flows from all to all; unlike the one to all unidirectional flow of the mass media functions. The post–mass media functions operate by "niche" (not the hit), creating what Chris Anderson (2006) called the "long tail" economy, that is, the possibility of offering numerous products for few interested people. The structure of the network put everything available for everyone, everywhere! We can see these post–mass media functions on the actual development of blogs, free software, podcasting, wikis, collaborative maps, and so on. They operate under what I call the three basic principles of cyberculture: "release" of the emission, "bidirectional connection," and "reconfiguration" of institutions and cultural industry (Lemos, 2006).

The role of mass media function is "information," whereas that of the post–mass media function is "communication" (like blogs, wikis, map collaboration, chats network, social software networks, etc.). I understand communication by the bidirectional exchange of messages and information. The new tools of post–mass media functions insist in conversation, interaction, communication processes. We can produce information, talk with others, and collaborate, exchange opinions and ideas in real time. TV, radio, newspapers, and magazines inform us and the communication process comes later in public sphere (Habermas, 1991).

This is not the "best" information mass media function, but complementary. We must think in terms of function, not of devices. Mass and post-mass functions are present both in analog and in digital media. For example, a large portal on the Internet tries to act as a massive journalistic mass media, by hits, whereas printer fanzines and flyers or community radio stations act like post–mass media functions, by niche. There are permanent tensions, and it is good for the contemporary communicational landscape because we have now two functions in operation. This increases the supply of information, the options of access, the free publishing and planetary movement. This new communication landscape creates a crisis in classical cultural industry (copyright, citizen journalism, free software, P2P networks, etc.). This new (re)configuration is not the end of mass media functions: journalistic sites are using blogs and podcasts, podcasts emulate radio programs, television refers to the Internet, the Internet refers to television, television uses promotions via mobile phones and SMS, cell phones providers broadcast TV programs.

We must understand city, urbanity, and mobility within this new media framework. The impact is on mobility and on the way we produce and consume information. Think about the way people have to produce and circulate information in the cities with mass media function: you can consume information. It is difficult and for few to produce and circulate information. Similarly, the forms of interpersonal communication were limited to confinement (home, office, factory), or the public apparatus (public telephone booth) or amateur radio. In most cases, access to information is through devices (TV, radio) in private spaces (car, home, office), with the exception of the printed medium, which allows reading on the move, and radio. However, there is no possibility of producing content and circulating it.

The current mass and post-mass functions allow new form of informational and physical mobility, as we will show later. Now we have the possibility to move physically/spatially and virtual/informational at the same time. This "total mobility" is the differential and it's the main

feature of mobile computing and post–mass media function. Now, the city is not only a "point of presence" but also a general environment of connection (mobile wireless Internet, cell phones, Bluetooth, radio-frequency labels, radio-frequency identification [RFID]), involving the user (both for production of information content and for control and surveillance).

Locative Media

We can define locative media as a set of technologies and info-communicational processes whose informational content binds to a specific place (Benford, Flintham, & Drodz, 2006; Chang & Goodman, 2006; McCullough, 2006; Pope, 2005). Locative is a grammatical category that expresses place, as "in" or "next to," indicating the location or the final moment of an action. This implies a relationship between places and digital devices and networks (geographical positioning systems [GPS], mobile phones, laptops, palms, Wi-Fi, Wi-Max, Bluetooth, radio-frequency identification tags) hitherto unprecedented. The term was proposed in 2003 by Karlis Kalnins, at the Center for New Media, in Riga, Latvia. The purpose was to distinguish the corporation use of location-based services from artistic propose. Kalnins coined the term from the discussions of the "Locative Media Lab," an international network of artists working on these technologies.

Locative media create new forms of representation and social experiences in a place by digital interfaces and involve both "location-based computing" (LBC) and "location-based services" (LBS). LBA is a combination of mobile Internet, wireless communication, and position, location, and information technologies. LBS consist of a broad range of services that incorporate location information with contextual data. It provides a value-added experience to users (Karimi & Hammad, 2004). The spectrum is huge, from finding information about a restaurant with a cell phone, be guided by GPS in the car, having accurate picture with geographical information system (GIS) and geo-tags; and playing with mobile devices in public spaces, among others.

Locative media has post–mass media functions, used to aggregate digital content to a place or objects, serving to track, monitor, map, locate or games functions. Places and objects are now able to dialogue with informational devices, sending, collecting, and processing informational data. Not only several companies but also artists and activists have used the post–mass media power of locative media as a form of marketing, advertising, and control, for the former, as well as a new form of writing and reading the urban space, as a way of reappropriation and creation of meaning in an urban space, for the latter.

Informational Territory

I'll put it this way: Space is constituted by places that are created by inside territories in an endless process of mutual influences, horizontal and vertical (inside each category and among them). Today we have to take into account a new form of territory in contemporary societies: the digital, informational one. Every territory is a place of social control of borders, of informational exercise of surveillance and violence. The territoriality is a "cultural artifact" that shapes social relations and our relationship with the material and symbolic world. We're always immersed in territorial layers (subjectivity, physical, cultural, political, economic) and theses layers constitute places.

By informational territory I mean the control (and to be controlled by) of *digital information flow* in a physical area. It's a new territory within places created by the intersection between urban space and cyberspace. We must understand that places are result of negotiations among territories. Today, new senses of places emerge from these new layers of territories. By informational, I mean digital, electronic informational flow. Though all territory is made by information, by informational territory I want to differentiate digital information layers from other forms of "information." Digital information layer makes informational territories within places. I would

like to emphasize the new forms of access and control (territory) of information, held from mobile devices and wireless networks, in a physical place. This is not the end of places, the no sense of places, or a no place (Augé, 1995; Meyrowitz, 1985; Virilio, 1984), but new senses of places, territories, mobility, and community.

The informational territory is not the cyberspace, but the territory in a place formed by the relationship between the physical dimensions and the electronic flows. For example, a Wi-Fi network in a public park creates an informational territory (people who have informational power can log on to the Internet to *produce* and receive information) that has to be taken into account to think about that place. This layer is in relationship with others (laws, regulations, subjectivities) that constitute a "new sense" of the place "park." It's not the end of the park, but a new signification. By accessing the Internet through theses network and devices, the user is in an area of informational control within other territorialities. It means he or she can control what to receive and what to produce, but has to deal with other forms of power and control (other territories). The informational territory is bound to a physical territory (political, legal, cultural, imaginary, etc.), but it transforms, by the means of electronic data (their rules, codes of access, speed), the function of this place. It creates a new heterotopy (Foucault, 1984), as we'll see later. The informational territory changes the place because all places are dependent on the synergy between imaginary, subjective, corporeal, technological, legal territories.[2]

Interesting artistic experiences can help us to "see" these informational territories. Think about the work of Hasan Elahi, an academic and artist who developed a system of self-surveillance. Elahi tracks his entire move with GPS data and puts it on his website.[3] He began the experience after being questioned by the FBI in 2002 (accused of storing explosives in Florida). After the investigation, it was proved that he was innocent. Now, he controls all information about himself. Here we can see, by self-surveillance, an attempt to control his informational personal territory.

Another example is the work of artist Susan Härtig, "Disconnected"[4] where she tries to show how wireless networks (electromagnetic spectrum) are creating and expanding informational territories. We are all, whether we want or not, immersed in that spectrum. This artwork is an attempt, in an opposite way, to block the access, to disconnect people. The artist builds a tent that insulates the user, preventing access to the electromagnetic cloud. Here, the "territory-tent" blocks the "informational territory." The tent is also seen as a nomadic architecture, but in reality, though it is mobile, it creates a striate space, an area of territory in the midst of the deterritorialized flow (Deleuze & Guattari, 1980). These examples show how the issue of place is complex.

Locative Media Projects

I suggest that to understand the post–mass media functions and the new informational territories, we need to analyze four categories of project with locative media that can help us throw new light on the actual dynamic of place, territory, mobility, maps, and community. We cannot go deeply here on the description of the projects, but I'll give a brief indication and let the reader discover these projects on the Internet.

Urban Electronic Annotations

Electronic annotations are new ways to "write" the urban space with mobile devices. Physical annotations, such as posters, stickers, outdoors, or graffiti are current practices in big cities (as forms of what I call "analogical locative media"). The new "electronic" locative media allow new ways to produce invisible annotations using the power of mobile technologies and networks to index data to a location. You can see these new forms of "writing" and "reading" places in lots

of examples: Yellow Arrow[5] where tags are attached to urban space. These tags have a code and with a cell phone people send SMS to this code and get what other people "write about the place" (text, video, photo, or audio); Sonic City[6] where we can "hear" the informational territory in wearable information systems that allow the user to interact with the environment and produce "live music"; mScape[7] from HP or Node Explore,[8] projects in "mobile augmented reality applications" (MARA), a way of annotation that puts explicitly an interpolation of informational and physical layers in the real world, "augmenting it". Here, representations of the real world have been embedded and contextualized with electronic information, enabling interactions both in real and virtual spaces.

These projects with electronic annotations put in evidence new forms of producing content about places and show the informational layer of the new informational territory. Here we can see how temporary uses of place, by the production and consumption of locative data in informational territory, creates new sense of places, new forms of appropriation, and new processes of de-re-territorialization and mobility (physical and virtual) in contemporary cyberculture.

Mapping and Geo-Localization

Here we have locative functions applied to mapping and tracking of movements in urban space. This is possible by attaching information (photos, text, video, sound) to maps as well as to create new maps. In the photo-sharing Flickr, for example, users are adding geo-tag in electronic maps. This system allows the sharing of tags through location of places worldwide. Our project Wi-Fi Salvador,[9] for example, maps all the wireless hotspots in Salvador, Bahia, Brazil, with photos, videos, and information about them. It is the first project in Bahia and it tries to show the invisible connection across the city. The project is used by graduate students interested in communication, city, and the new sense of place in the city.

Communities too are building bottom-up maps that represent themselves like "Neighbornode"[10] and "Peuplade."[11] One interesting project is Citix,[12] in Recife, Pernambuco, Brazil. The system is a collaborative map about the city, whose content is produced by the citizens. The main goal is to engage people in a content production and localization as a way to produce meaning of place. The webpage reads, "CITIX is our city in movement. You can make waypoints, and share location and information about theses location with others. [. . .] In our city, things happen all the time and now you can see it in real time."

It's possible too, to annotate the urban space by plotting and tracing with a GPS device. This is an invisible draw in urban space. GPS drawing[13] began with Jeremy Wood who subverted the GPS military logic using the device to draw and write. Our project SUR-VIV-ALL[14] in Edmonton is a GPS writing. The idea came from the crossing of my reading of Margaret Atwood's (2004) book, "Survival," with the research on locative media. In the book, Atwood argues that "survival" is a recurrent pattern in Canadian literature imaginary, both of prose and poetry. We "wrote" Edmonton in 40 km with a GPS tracker, and mapped some hotspots along the way. What we were looking for was a way to get closer to the city, to understand and feel their places, their dynamics. The word "SURVIVAL" has been changed to "SUR-VIV-ALL," trying to create different meanings in English and French, the official languages Canada, and in Portuguese, my mother language. In French we can see or infer "SUR-VIV (R) E / VIE . . .," something like an excess or a lack of life. In Portuguese, "VIVA" means claiming to live, an imperative. In English, "survival," has its original meaning, plus "ALL," which claims for a social dimension, the public, and the community. What is at stake here is the imagination of the city, the relationship with extreme temperatures, the use of cars as standard displacement, the empty spaces, and the invisibility of electronic processes (written by the GPS is invisible as well Wi-Fi hotspots) on the actual structures of public space.

These experiences show new ways of producing maps, of creating new forms of displacement within the urban space. Mapping with digital devices are given new tools for reinforcing communities, the appropriation of places and new territorialities. Mapping, tags, and localization can be seen as a new way of creating meaningful experiences in the actual cities.

Location-Based Mobile Games

Location-based mobile games are online games that use mobile devices with locative capabilities in the urban space. Here we can see the popular and well-known "Geocaching" (an outdoor treasure-hunting game in which the participants use a GPS to hide and seek containers anywhere in the world—480,000 geocaches registered in over 100 countries), "Uncle Roy All Around You"[15] from British group Blast Theory (that uses palmtops, cell phones, and Internet network to play on the streets and find Uncle Roy in 60 minutes. Street players can see online players exploring this same area of the city on the map on their handheld computer) or "Pac-Manhattan"[16] (the street version of the original Pac-man game coordinating actions through mobile phones and Wi-Fi networks). In Brazil we can mention two different experiences: "Senhor da Guerra,"[17] an SMS game that uses the potential of SMS to play in a city; and Alien Revolt,[18] the first in Brazil, that uses the city like a playground in a battle between aliens. New experience merges game and augmented reality, for example, "mScape"[19] from HP.

Here again, by the way of the ludic dimension, the city becomes a playground, as we used to play in old past time. The play dimension of locative media helps create new forms of appropriation of the urban space, new form of communities and, as the projects shown bellow, new senses of places and territorialization.

Smart Mobs

Smart mobs are political and/or aesthetic mobilizations coordinated by mobile devices, usually cell phone and SMS texts. These actions bring people together to perform an action (artistically or politically) and disperse rapidly. These actions put people on public spaces and use location capabilities to spread information. These practices can have artistic purposes, such as a performance, or be committed to a political-activist nature. Howard Rheingold (2003) calls this group of practices "smart mobs."

The first type—hedonistic—are the "Flash Mobs," lightning-demonstrations, apolitical, in which people choose, via networks (blogs, mobile phones), a public place for swarm and disperse, causing perplexity and astonishment to the passersby. Flash mobs began in New York and have spread throughout the world. Cities like Amsterdam, Berlin, Boston, Budapest, Chicago, London, Melbourne, Oslo, Rome, San Francisco, and Zurich have already experienced this new practice. In Brazil, flash mobs have been organized in São Paulo, Rio de Janeiro, and Salvador and in other cities.

The second type, political Smart Mobs, try to mobilize crowds for the purpose of political protest. Smart mobs have occurred since 2004 and are a common occurrence now around the world. Those with the greatest impact were the demonstrations that brought people together by means of SMS in the political protests in Philippines against President Estrada, and in Madrid, after the terrorist attack on the trains in 2004. In 2005, smart mobs took place during the civil riots in France. The press has noticed Brazil smart mobs with the PCC in São Paulo (the criminal organization plots attacks all over the city), student protests in Chile in 2006 and 2007 against Microsoft, in Shanghai in 2007 against the expansion of maglev tracks), in Philippines to build a network as a help line for activism, in Pakistan against President Pervez Musharraf, in Uganda for women rights, and so forth. Although we cannot attribute the political consequences just to

the mobilization by means of mobile technologies, the importance of these tools for mobilization seems clear. The use is growing worldwide.

Smart (and Flash) mobs show forms of mobilization with mobile technologies, putting in evidence temporary uses of spaces, physical and informational mobilities, swarming actions, creating new uses of places and territories. They can also reinforce old and new communities and those aesthetical and political uses of the city.

Old and New Meanings of . . .

All these experiences with locative media indicate that mobile technologies are not seeking for the virtual to overcome the real world, to deterritorialization processes and the end of use of physical places in our contemporary cities. Instead they put the emphasis on control, territorialization, production of content bound to objects and places. So we must avoid a romantic and dichotomous view of this news cyberculture processes and try to understand new and old meanings of concepts like territory, place, maps, mobility, and community.

Territory

We constantly face territories and boundaries. Territories are areas of control of borders where the mobility and flows are exercised (at different speeds, forms of access, power, and amplitude). Borders are membranes and allow communication. Control and surveillance are forms of monitoring and tracking movements and flow within territories to keep the boundaries. So, to think about territory is to take into account mobility and flow, ways to exercise control, surveillance, and violence. To understand mobility and flow with the new locative media technologies, we must take into account not just the physical territorialities but also the new forms of informational territoriality.

Territory derives from the Latin "terrere," "terroir," and "terror." While this notion is linked to a geographical sense, the general principle can be applied to all kinds of territory: "zones of control." What a territory means depends obviously on tensions between borders (Delaney, 2005; Gottmann, 1973; Lyman, 1967; Sack, 1986). So territory reveals a communication problem—limits, access, control, exclusion—defined by social relations. Territory is not only a place of separation but also a medium. The differentiation between the "inside" and "outside" creates a permeability of membranes; it creates communication processes. Communication only exists in relation with another, and this relationship is always movement (understanding, comprehension, agreement, or the opposite terms). Communication is a process of deterritorialization within the borders, as well new territorialization within territories. These practices will define places and space as a fluid and mobile state. It is violence (war, surveillance, censorship) that controls flows within and between the borders, giving to us an artificial feeling of stability.

In abstract space, we can find places permeated by intense flows that create a sense of belonging. Within these places, there are zones of control, or territories. The dynamic between territorialization and deterritorialization gives meanings to place. The space is the whole, the place is an "event" created by territories, fluid areas of control, permeated by the internal dynamics (horizontal and vertical). Places are too fluid, produced by territorial negotiation (horizontal dynamics) and negotiations between places (vertical dynamics). Space produces places. These places, by internal (belonging feeling) and external (relationship with other places) dynamics, are formed by territories. Space, place, and territories can be seen as waves of territorialization and deterritorialization as an endless process. Consequently, we must not see the territory as natural, but cultural, a social product linked to desire, power, and identity. The social life produces significance in space, and consequently produces places. Places are formed by the complex relationship between

territories and territorialization processes. So, it is not out of context to think that the information society creates new kind of territories, as the informational territory we are suggesting here. We can think of the territories as devices (Delaney, 2005), resulting from social and historical conditions of production.

As we've seen, the concept is complex, referring to various fields, from the demarcation of an area of political and economical sovereignty (international relations), to the expression of collective identities (anthropology), to forms of control and hierarchy of social relationships and body (sociology), and to the "inner space" to promote privacy, comfort, and emotional subjectivity (psychology). We have to understand the notion of territory as a dynamic struggle between flows across borders (religious, identity, geographical, economic, etc.) that constitute places.

Globalization has created new problems with borders, increasing the porosity and new ways of communication, creating crisis in territoriality dimension (nation state, body, subjectivity, culture, politics, economy). With the informational economy we must see territories (physical, geographical, subjective, political, etc.) not as "sealed boxes," but as "hubs." Today with the NIT and mobile networks, there is a shift of power from disciplinary confinement to power as mobility tracking (control) where tensions in informational territories are controlled by CCTV, passwords, profiles, tracking surveillance, and so on. Thus, informational territories reflect new dimensions of territoriality, new relations of power and new social practices in contemporary society. As Delaney (2005) explains, "the profound changes in communication, transportation, and state practices during that time (modernity) have transformed the practical significance of boundaries, and therefore the territories themselves. The practices and processes of territoriality and territorialization have also change dramatically" (p. 27).

So the idea that territories are vanishing in a complete deterritorialization process and place and location are losing their senses by the action of informational networks technologies does not seem correct. What do we do when creating tags and maps, when using a GPS with a mobile phone to find a location, when producing content and annotating electronically a place, when playing a location-based mobile game or when organizing mobilization in public space by SMS? Nothing but controlling the space, creating a new sense of place, new forms of territorialization. But this is an endless process because territorialization claims always for deterritorialization and vice versa.

Place

Places are created by territorialization dynamics. As we've seen, place is an "event" (Thrift, 1999) created by flows within territories and between places. Place is a production of social (Lefebvre, 2004) meaning (emotional, historical, cultural, political, imaginary). For Tuan (1974), the space is generic, is movement, and the place, the particular, the stop, the "home" of community. Place here is seen as fixed borders, institutionalization, permanent control of an area of the generic space. As Cresswell (2004) put it, "place focuses on the realm of meaning and experience. Place is how we make the world meaningful and the way we experience the world" (p. 12).

The philosophical vision prevents us to see place only as a social fact. Though it is an essential dimension of human existence, place is a form of seizure of the world, an "a priori" to Kant (1944/1965), an ontological need for Heidegger. We have "to build a dwell" to inhabit the world. This construction is a production of "place," the place of man in the world, the "Dasein." Men need to transform the external environment by the powers of technique, language, and institutions to make it full of meaning. So we can inhabit it. Space is a vacuum, place is produced. Without that production, man does not exist because it is the essential need of place that "produces" society, not the opposite.

With the evolution of society in the industrial age, and the growth of movements and flows of goods, capital, people, and information, place cannot be seen as a fixed portion of space, as an anchoring point of community. Seen as a point of attachment and rooting, places disappear with the increasing mobility of modern societies. But this is a misunderstanding of the concept of place. We have to face new dimensions of place, and see it as an intersection of flows (Shields, 1999), as a "hub," dynamically produced in time. That vision goes against the thesis of thinkers like Tuan (1974, 1977/2003), Harvey (1989), Meyrowitz (1985), Virilio (1984), Augé (1995), who sustain a diagnosis that places are dissolved into "no places," that it "loses its senses," and that speed and space and time compression are "erasing them." Mobility and flow destroy, erase, and weaken the sense of place. We do not live without a place, but place, since ever, must be seen as lines of escape, movements across borders, appropriation, and tactical uses. Today, more than ever, places are flows. Places are never just an immutable "topus" because they are always the result of crossing cultures (wars, trade, communication, transportation), an update of a temporary endless virtuality that transforms it into a matrix of intersection and connection of flows (Amin & Thrift, 2002; Coultry & McCarthy, 2004; Cresswell, 2004; Massey, 1997).

How can we think and define places in advanced societies, in an era of global flows of information, people, goods, and capital? The analysis of locative media can help us see that they do not only continue to exist, but that they are the main goal of the development of these media. Locative media do not point to a world of electronic cyberspace apart from the physical world. Instead, they insist on "augmented realities," in playing on the street, in annotating, mapping, and tagging real things. What we are seeing now are several examples of integration, mixed processes that merge electronic and physical territories, creating new forms and new senses of place. As Pred (1984) argues, "places are never 'finished' but always 'becoming.' Place is what takes place ceaselessly, what contributes to history in a specific context through the creation and utilization of the physical setting" *(*p. 279). Or as Thrift (1994) puts it, "places are 'stages of intensity.' Traces of movement, speed and circulation" (1994, p. 212-213, cited in Cresswell, 2004, p. 48). Places are in process, and as Massey says, ". . . instead of thinking of places as areas with boundaries around, they can be imagined as articulated moments in networks of social relations and understandings . . ." (cited in Cresswell, 2004, p. 69).

Change in place functions is what Foucault (1984) called heterotopy. Heterotopias are functions of places,

> real spaces—spaces that exist and are trained in the very foundation of society—which is something like counter-sites, species of utopias held in which all the other real sites that given culture can be found, and where are both represented, challenged and reversed. (Foucault, 1984)

Heterotopias have five principles: (a) Every culture creates heterotopias, such as those of crisis in primitive society and of deviation in modern society. (2) Heterotopias function over time (like cemetery, prisons). (c) Heterotopy overrides various spaces in one, such as theaters, cinemas, gardens, and so on. (4) Heterotopy is linked to short periods of time (cumulative, like libraries and museums, or temporary such as festivals, fairs, and carnivals). (e) Heterotopias have a system of opening/closing, making space free or hermetic.

As a hypothesis, we can say that informational territories create new heterotopias of places, new informational functions. Wi-Fi hotspots, access to cell phone networks, Bluetooth, and RFID tags create new heterotopias in places. We can see here the five principles proposed by Foucault. Informational society creates a new heterotopy (informational control) within places. Places (public or private) as squares, shopping centers, schools, offices, hospital, library, banks, are changing with informational networks and informational territories. There are also new temporary use of

theses space and a merge of different kinds of functions, including new forms of control, access, surveillance, forms of openness and closeness (passwords, access profiles, etc.). Informational territory creates new heterotopias, new functions in actual places and are redefining social and communication practices. Such technologies create new "spaces of flow," new territories within this places. Here we see clearly how the informational territory resizes the (physical) place. It is not the end of squares, school, home, shopping, hospital, office, and so on, but new meaning (new functions) of theses spaces. New heterotopias create a revitalization of places.

Mobile technologies and networks create new forms of mobility in institutions of confinement by allowing deterritorialization (exchange information) and also new kind of territorialization, by controlling the access to the informational layer. The informational territory implies at the same time, dissolution and creation of new forms of controls. New tools imply new powers (parental control, passwords, surveillance, control of the cell phone use, etc.) that change these places. New ways of controlling information redefine places. Projects in locative media, such as urban annotation, location-based mobile games, mapping, as well as flash and smart mobs function as a new city language spoken by new technologies. Just as Tonkiss (2005) analyzed graffiti and skate, we can say that locative media "take(s) the surface of the city as a space in which demands might be advanced, inscribed identities and challenges issued" (p. 140). This practice can also be seen as subversive or simply illegal, since they break control and surveillance systems, creating new tactical use of space. But locative media creates as well new forms of monitoring and control of an old physical space.

Mobile technologies and networks create new urban ecologies that redefine place and our sense of the city, changing our everyday experience of places. Consider the use of mobile device like cell phones and laptops (the most popular): the search for a hotspot makes people sit in that place instead of another one; the exchange of phone calls or SMS creates a new movement on the streets and new forms of synchronicity or meetings; the current ways of locating and mapping change the way we view and interact with the city structure; the access to information on mobility in blogs, micro-blogs, or social software changes the way people produce content about their experience on the urban and link them to their community. These technologies are producing new forms of anticipation and pace on everyday life, new mobilities.

Mobility

Mobility is inherent to humans. A historical perspective shows us the systematic creation of mobility throughout history by means of transport and communication. This need for mobility is also correlated to the need to establish a fixed place, to build a memory, a point in a generic and abstract space, as we've seen. Mobility puts together communication and technological, geographical, economic, cultural, and social issues (Castells, Fernández-Ardèvol, Qiu, & Sey, 2007; Hannan, Sheller, & Urry, 2006; Höflich & Hartmann, 2006; Kellerman, 2006; Kwan, 2007; McDowell, Steinberg, & Tomasello, 2008; Sorokin, 1964; Urry, 2000). As Tuan (1977/2003) explains, "human lives are dialectical movement between shelter and venture, attachment and freedom" (p. 54).

Mobility is what allows us to go from one point to another (imaginarily, physically, or virtually), "dis-place." The "dis-placement" is not a denial of place, but a way of re-meaning it. Mobility and power are complementary processes that create tensions between its virtual, physical, and imaginary forms. There are three ideal types of mobility: "physical/spatial" (transport), "virtual/informational" (media), and "cognitive/imaginary" (thoughts, religion, dreams), and we can see three possible actions between theses mobilities: replacement (if one type of mobility annuls the other—working at home or study online can eliminate the need to move to physical places), complementariness (we can move to have access to information), and additivity (the use of GPS

complements the displacement, the access to information on mobile devices complement the daily displacement; Kellerman, 2006, p. 8). Transport and communication systems create the dynamic between private and public spaces, between proximity and distance, between locomotion and shelter, between curiosity and apathy, between lines of escape and striated space, and between personal and community networks.

Communication technologies (mass media and post–mass media functions) are a way to reinforce these physical and virtual mobilities. We can understand media as artifacts of mobility in space and time (from writing to the Internet). Today, the space–time compression is increasing, and at the same time, virtual, imaginary, and physical mobilities. Wireless technologies melt physical and virtual, bringing new problems of border between private and public, between "dis-placement" and place. This virtual/informational mobility has direct impacts on physical/spatial mobility as well as on imaginary mobility. As suggested by Bonss and Kesselring (in Kellerman, 2006, p. 55) there are stages of mobility: "traditional" (by the end of the 18th century), "territorial" (emergence of the nation state in the 19th century), "global" (with new means of transport and communication in the 20th century), and "virtualized" (with the new media, Internet, and mobile technologies). Today, the virtual/informational mobility acquires greater importance with the mobile technology and the post–mass functions of media because we have now the possibility to exercise a total mobility: physical, imaginary, and informational at the same time. According to Kellerman (2006),

> individuals "carry" with them their own territories. Some of this is becoming apparent through the growing use of mobile phones, laptops and mobile memories, which permit one to carry his/her whole personal library and to have immediate access and communications without any regard to location. (p. 64)

But we cannot state that control information can be given "without any regard to location." Place remains essential. Without the informational AND physical layers, there is no possibility of this total mobility.[20] What's new? The possibility to *consume and produce* information on the go. Not only can we think about the users' status but also about places that are mobile (like airplanes, boats, cars, trains) that have new virtual/informational mobility with wireless network capabilities. As Kellerman (2006) explains,

> emerging wireless transmissions, whether through laptop computers, or through mobile telephones, which imply an intersection between enhanced physical mobility, or the growing ability of humans to move fast and efficiently across the globe, on the one hand, and their enhanced parallel virtual mobility, on the other. (p. 74)

The informational territories are products of this new state of mobility. Though, while deterritorializing, creating virtual/informational mobility, they are also territorializing, creating control and immobility in a fixed place. So mobility is not just an act of bodies or information, but an act of power. Bonss and Kesselring (in Kellerman, 2006) proposed the term *motility*, borrowed from medicine and biology, to think mobility as potential, virtual: "the propensity to be mobile . . . which is likely to vary in intensity from one person to another" (Kaufmann, in Kellerman, 2006, p. 8). Thus, mobility should not be seen as the only route between points or access to certain punctual information, but a dimension in power and potential power. With the actual "total mobility" there is an increase in "motility" in global sense, an increase in human power to movement. But it is virtual, potential, and there is no guarantee of actualization. This potential is constrained by the "extensive," that is, the ability of a person or a group to overcome distance (physical, virtual, imaginary), and the "accessibility," the opportunities available to

perform the movement (virtual, physical, or imaginary; Kwan, 2007). We see the balance of power here: the differences between those who have and those who don't have access to transportation or communication devices.

Thinking of mobility as power involves the reflection on the immobility too. Deterritorialization and territorialization emerge as Urry (2000) calls "mobilities and moorings": "mobilities cannot be described without attention to the necessary spatial, infrastructural and institutional moorings that configure and enables mobilities . . ." (p. 3). The means of transport and communication, including now the mobile digital media, not only involve mobility but also moorings created by the infrastructure, the places. In addition, someone's mobility is given according to others' immobility. These different degrees of mobility express powers and controls (access to the machines, networks, physical spaces, cultural spaces, linguistic world, etc.).

Temporality

We always use the urban space temporarily: by car or on public transportation, public restrooms, and sitting on a square, strolling on the streets. The temporary use always refers to the mobility. Moreover, the practice of staying too long in a public space (to sleep on a park bench or to sit on the floor in a shopping center, for example) is often suppressed by the authorities.

The concept of use has two important dimensions. Use is obviously to use, spend. But use also implies a right, the enjoyment. This practice is defined by social relationship since the use is a function in relation to space or a thing. Hayden and Temel (2006) explain that

> use is, in any case, not a quality that is inscribed in things, but rather buildings or spaces social relationship in the triangle of property, possession and right to use. In that sense, use is a more or less flexible relationship within which people can make various uses of one and the same thing or, expressed more generally, can relate to this thing in different ways— and thus pursue different interests. (pp. 26-27)

Today, in the age of global networks and flows of information, temporary uses of space is increasing: travel, commuting, tourism, and even at home, which is designed as a perpetual location, in most cases, it's only a "shelter," a temporary place (apartment rent, flats, lofts, squats). With the constant and increasing flows of people, commodities, and information, the city is no longer a home, but a temporary shelter, flow, not permanence. However, places are designed (by urban planners, architects, engineers) to be permanent: houses, squares, buildings, monuments, schools, factories, shopping malls. The modern city locates things and stabilizes the movements by the rules of planning and by laws that regulate people movements.[21]

A temporary urban space can be defined as a fixed space giving "shelter" to unusual uses, not scheduled and often illegal (artists using squares to serve as a dormitory, meetings to political protest, graffiti, skates, *parkour*, performances, carnival, etc.). These kind of temporary use of space, create a new meaning of place that makes sense "here and now." Alternative locative media projects are creating new heterotopias in old places, where standard temporarily use can become smart or flash mobs, location-based mobile games, electronic annotations, GPS drawing, mapping, and so on. These temporary uses of space are creating new meanings, putting in evidence the flow that characterizes the places in contemporary cities. The temporary informational use of a place, in addition to the temporary conventional uses ("regular" uses of mobile technologies and networks—cyber café, public hotspot, cell phone), puts in evidence a "tactical" (de Certeau, 1984), a temporary social production of space. Informational mobile technologies create processes of appropriation by temporary use of places (strategic and ruled, and tactical and free as well).

Community

An important subject to urban sociology is the relationship between community and society. The city is seen as a place that insulates people, where the lack of contact and privacy prevails. The community is a social pre-urban form, and only remains today in identity aggregation and subcultures, as a reaction against the societal breakdown. Tönnies (1971) marks this difference by introducing the two ideal types "Gemeinschaft" and "Gesellschaft" though they do not exist as standalones. For Simmel (1950) cities put people "not only into indifference, but, more often than we aware ... a slight aversion, a mutual strangeness and repulsion." Indifference and aversion are two characteristics of modern urban life as a way of preserving a "psychological private property." The crowd brings, at the same time, a collective dimension and the sense of isolation in the urban space. Despite the city being characterized by the "anonymity, instrumentality and atomization" (Tonkiss, 2005, p. 14) community forms continuously to emerge, whether in organized social groups, social classes, or new tribes.

The city is the place of modern experience. It drives the individual to everyday contact as well to loneliness and isolation. Here appear the main characteristics of modernity: instrumental rationality, anomie, individualism, abstract, impersonal, contractual and institutionalized relationships (Park, 1925/1967). This is society and what differentiates it from community? Thinking about mobility today, and the new practice with informational mobile technologies and locative media process, obliges us to review the social relations and the communication practices. Could locative media recreate community feelings of belonging? What are the goals of bottom-up projects if not, effectively, creating more effective ways of communication between people and new forms of fighting against anomie and separation?

We have to think about communities in places as in electronic network. As many studies about "digital community" have shown, communities can exist without physical proximity. Moreover, mobility and flows can improve it. The city is made by public (streets, squares, parks, etc.) and private spaces, and information networks can extend the forms of mobility, community, and use of place, as we have seen. If we think about place as flow and events and mobility as a way to get together, we can see communities as a mobile form of association, not only a rooted experience in rigid place.

Locative media projects, which use the urban places as physical subtracts of informational layer (the informational territory), put the street level in evidence. Think about the mobile social networks, collaborative maps, urban annotations, bottom-up mobilizations, location-based games, smart and flash mobs. They are good examples of community bond. These experiences can be seen as a way to combat the emptiness of urban space, to rebuild the social bond beyond as complementary to physical contacts. Electronic relationships can reinforce the community bond and the meaning of place. Community only makes sense today in terms of mobility, or fluidity (Falkheimer & Jansson, 2006). For young people, community is their friends and family members that they can meet face to face and in exchange of mobile digital information in blogs, micro-blogs, social software, SMS text, cell phone photos, and videos. These online relations strengthen face-to-face relations and the use of urban spaces, creating new meanings and temporalities of places. So, discussions on Facebook, updates in micro-blogs, synchronization of activities by SMS, perpetual contacts with cell phones are all new activities that reinforce social relationship and the community belonging. We must avoid a nostalgic vision of communities, of places and cities, on the risk of no longer seeing the urban realm that is growing in front of us.

Maps

The use of maps and mapping processes with locative media is unprecedented. With new systems like GIS and GPS or free software and web systems like Google Maps or Google Earth, mapping

is new practice of place. Maybe we're realizing the idea of Borges in "Del Rigor en la Ciencia." In this text with one paragraph, Borges shows a place where the map of an empire has the dimension of the territory. The map is the territory and mapping a new practice of perception of the cities (Abrams & Hall, 2006; Dorling & Fairbairn, 1997; Harmon, 2004, Wilford, 2000): send an SMS to Google to know where is the X café, log on to a system with my cell phone to know where I am, access online systems to know where is the Y cinema and the schedule of a film. These systems are enhancing my move on the city and creating "augmented reality," that is, informational layers that interconnect physical and electronic information.

Mapping my moves on the streets is controlling the space; it is territorialization. It is not only dispossession but also getting lost. The use of GPS and other devices for location and location-based services puts emphasis on control and domination over a territory. These new locative devices allow greater control over an area rather than raise new possibility of losing. As the cartographer Paul Mijksenaar shows, the use of maps and GPS is an evidence that people are "frightened of their environment . . . and do not want to be lost (. . .) most planner and designers regard the experience of being lost or disoriented as the urban equivalent of a fatal disease" (cited in Abrams & Hall, 2006, p. 14). Controlling or losing control, the locative media, by one way or another, is given new functions to places.

If the relationship between city and maps has always been historically close, today the power of the locative media puts it in a new and more efficient way. Electronic maps and mapping with locative media are building control and creating power over places, a new kind of social production of space. Maybe the map is becoming the territory, or put in another way, is producing socially new means of places. Mapping is now, as any cartography, a creative intervention in urban space, shaping both the physical city and the urban life experience. We also have a social changing. Technicians, governments, and private companies controlled mapping. Now we have an ownership shift because the bureaucratic power is now moving to the users, ordinary people. We see that the tactical use of maps (psychogeography) started with the surrealists, Dadaists, and situationists in the 1950s and 1960s, and reinforced by Michel de Certeau's (1984) "rhetoric of walk." With electronic popular mapping, the urban space is being used as a tactic for produce sense in daily life, dealing with the constraints of rationalization in urban modernity (Tonkiss, 2005).

Mapping and geo-tagging with locative media can be seen as a way to combat the bureaucratization and the impersonality of urban space. One example is the use of GPS for drawing. GPS was originally meant as a military technology for location, not as a tool for artists to play in urban space. "Writing" and "drawing" invisible lines in space is not so much to location, but a way to propose new readings of space. It creates a deterritorialization of the device and a territorialization of the city. We know that maps are constructions, ideologies represented in the world and serve, always, to the constitutive powers (Rome, Spain and Portugal, British Empire, American military power). Today, with the Internet and locative media, mapping can be produced to represent people, community, and a more legitimate space and place that show how people see and fell their environment. We have a button-up process of representing the world, not mediated by the instituted powers. As Denis Wood puts it,

> the authority of the map is not derived from its accuracy, but from the authority of the person who draws it. The picture is a map when it is drawn by someone with the authority to draw maps . . . Maps are about social control and are usually created to serve the designs of their creators rather than to inform "the public." (cited in Dorling & Fairbairn, 1997, pp. 65, 71).

Conclusion

Alternative projects in locative media can help us to see informational technologies put in evidence new uses of urban space. It is not cyberspace but the uses of mobile technologies and network in physical places, with "real" objects, meeting "real people." These examples can be seen as a new research field, crossing geography, sociology, communication, urbanism, design, and informational technologies that show us new senses of places, new processes of territorialization, and mapping. A total mobility that creates new forms of build communities and of use temporarily the urban space.

The relationship between media and the city is always complex. In the 19th and 20th centuries, with the mass media functions, we were in the realm of broadcasting. We can consume information, in private or semipublic space, and it was difficult, almost impossible, to produce content on the go. At the end of the 20th century, with the emergence of post–mass media functions of new media, the relationship between mobility, place, and media has changed. We face a new mobility that puts together physical and virtual mobilities and at the same time new forms of places arise as a result of the relationship between informational and other territories that constitute them.

At the beginning of the 21st century, locative media and bottom-up process reinforce the hybridization of physical space and cyberspace, bringing new senses of place and communities. These processes are bound to the real world, far from an absolute deterritorialization, creating new forms of territorialization by informational control (the capability to produce and consume information in mobility). So the thesis of dematerialization, end of places and, as a consequence, the end of community seems to be the debate today. It is more useful to think about flows, events, and augmented reality rather than about fixed place, rooted community, or deterritorialization in cyberspace (the end of "real" with "virtual" powers). Locative media projects show experiences that create informational dynamics and events that are embedded on physical objects and locations. New maps can produce new forms of visualization and production of contents that rise from people and not from technicians or governments.

So we've tried to show that the ideas of a complete deterritorialization of space, of the end of spaces, place and location, and the weaknesses of social relationships and the growth of apathy and anomie must be argued. Information mobile technologies, post–mass media functions, and informational territories are creating new forms of territorialization, new sense of places, and new forms to reinforce communities as well as collaborative and autonomous productions of content. But we are at the beginning and everything is potential, virtual. Only a political view can reinforce these perspectives.

Notes

1. "Post" here doesn't mean something that arrives at the end of mass media process, but a new way to understand what cannot be put under the label "mass communication."
2. For example, in Rio de Janeiro, the well-known Copacabana beach now has a Wi-Fi zone. Locals and tourists can access the network from the sand. It's now a place with another informational layer, the digital one. The paradise of cyberspace and of wireless connection will be at the mercy of the intrinsic

characteristics of the place and users will have to deal with the insecurity of the beach. The government recognizes the new sense of place and to increase security it will install new surveillance wireless cameras, in a mix of illusion, ingenuity, and technological determinism. So, a Wi-Fi area in Copacabana gives the physical territoriality another function, it creates a new heterotopy, a heterotopy of access and control of digital information.

3. http://www.trackingtransience.net
4. http://www.verdaechtig.at/english.html
5. http://yellowarrow.net/index2.php
6. http://www.tii.se/reform/projects/pps/soniccity/index.html
7. http://www.mscapers.com/
8. http://www.nodeexplore.com/news.php?newsid=187
9. http://www.wifisalvador.facom.ufba.br/
10. http://www.neighbornode.net/
11. http://www.peuplade.fr/home/
12. http://www.citix.net/pages/sobre
13. http://www.gpsdrawing.com
14. http://www.facom.ufba.br/ciberpesquisa/andrelemos/survivall/
15. http://www.uncleroyallaroundyou.co.uk/street.php
16. http://pacmanhattan.com/index.php
17. http://www.senhordaguerra.com.br/
18. http://www.alienrevolt.com/pt/
19. The demo video can be seen at http://www.youtube.com/watch?v=BUOHfVXkUaI
20. Total mobility doesn't mean a mobility without constraints, a free mobility, but the possibility to exercise all the mobilities (physical, informational—consumption and production of information—and imaginary) at the same time.
21. Indeed, breaking these laws was the desire of the situationists: make the urban objects mobile, put out the art work from the museums and place them in bars or cafes (deterritorialization of the museums), put the books out of the libraries, on the streets, walk and write stories beyond the sights of official maps.

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Bio

André Lemos, PhD, is Associate Professor at Faculty of Communication, Federal University of Bahia, Brazil, Senior researcher at CNPq/MCT, Brazil. Carnet de Notes - http://andrelemos.info